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IX. SEPARATING FLOAT GOLD.—Much gold is lost in mining operations from the difficulty of separating what is known as “float” or “flour” gold from the water used in washing the ore, and E. J. FRAZER suggests that the water be filtered through sponge or some equivalent material having its pores filled with mercury. To recover the gold taken up by this process, the filtering medium should then be destroyed, either by fire or by acid.—*Science Rec.*, 1873.

X. WORKING SILVER ORES.—According to a statement by C. M. NES, silver may be extracted from its ore in the following manner: Melt one hundred pounds of the crushed ore with ten pounds of Codorus ore (a magnetic silicide of iron ore). The impurities having great affinity for the latter, will immediately unite with it and pass off as slag, leaving the silver and iron behind. These metals may then be separated by the use of a magnet, which will attract and remove the iron, leaving the silver in the crucible.

—*Science Record for 1873.*

XI. SEPARATION OF THE PRECIOUS METALS.—The old way of separating gold from sand or pulverized quartz is to cause the earth to flow down through an inclined trough, across which little pockets or gutters are made, in which quicksilver is placed. The latter catches and holds the particles of gold, while the earthy matter moves or is discharged from the machine. The latest improvement is to use, in lieu of the pockets, sheets of copper, the surface whereof is amalgamated with mercury, over which the gold earth, reduced to a thin mud, is allowed to flow. It is found that the gold adheres better to the surface of amalgamated copper than to pure mercury. This plan is now used in the Colorado mines. A late improvement, suggested by V. COLVIN, is to use amalgamated plates of zinc or iron, which he regards as superior to the copper plates, if they are treated with proper acid solutions while the auriferous earth is being run over them.—*Science Record for 1873.*

XII. GOLD FROM IRON PYRITES.—Professor J. M. MERRICK has, by roasting iron pyrites with marble-dust, then amalgamating with mercury and sodium, succeeded in obtaining metallic gold. He has obtained large returns from specimens of iron pyrites, in which the presence of the precious metal has been denied by the ablest assayers.—*Science Record for 1873.*
